

ATTACHMENT B
Amendments to the Claims

Please cancel claims 96-98, and 101-115 without prejudice or disclaimer.

This listing of claims will replace all prior versions, and listings, of claims in the application.

1-25. (Canceled)

26. (Currently Amended) An implant insertion instrument ~~for in combination~~ with a three piece intervertebral implant of the type that includes an upper part which can be placed against a vertebra, a lower part that can be placed against an adjacent vertebrae and a pivot element that can be inserted between the upper and lower parts, the instrument having two arms disposed adjacent each other and supported pivotally relative to one another at one end, each arm including at its free end opposite said one end a retention device for the upper part and the lower part, respectively, and including a longitudinal guide structure for the pivot element guided by at least one of said arms to push the pivot element.

27. (Currently Amended) ~~An instrument~~ The invention according to claim 26, wherein the longitudinal guide structure includes grooves and the pivot element includes lateral edges which engage said grooves.

28. (Currently Amended) ~~An instrument~~ The invention according to claim 27, wherein the grooves of the longitudinal guide structure face each other for receiving the pivot element for movement in the longitudinal direction of that arm.

29. (Currently Amended) ~~An instrument~~ The invention according to claim 26, wherein the arm having the longitudinal guide structure comprises two legs disposed parallel to and spaced apart from one another, the space between the legs forming a receiving chamber in which the pivot element is guided longitudinally along said arm.

30. (Currently Amended) ~~An instrument~~ The invention according to claim 26, wherein the longitudinal guide structure includes, near its end adjacent to the pivotal support of the arms, an insertion region whereat the pivot element can be inserted onto the longitudinal guide structure.

31. (Currently Amended) ~~An instrument~~ The invention according to claim 26, wherein the longitudinal guide structure includes grooves and wherein the lower part includes grooves which are aligned with the grooves on the longitudinal guide structure when that lower part is mounted on the free end of that arm, and wherein the grooves on the longitudinal guide structure and the grooves on the lower part are aligned with each other such that lateral edges of a pivot element can move directly from the grooves on the longitudinal guide structure into the grooves on the lower part.

32. (Currently Amended) ~~An instrument~~ The invention according to claim 26, including a pusher which is mounted on and slidable along the longitudinal guide structure for pushing the pivot element, and including an elongated rod extending from said pusher towards the pivotally supported ends of the arms.

33. (Currently Amended) ~~An instrument~~ The invention according to claim 26, wherein the two arms are disposed adjacent each other at their free ends and constructed such that the retention device on one of the arms is positioned adjacent to the retention device on the other arm.

34. (Currently Amended) ~~An instrument~~ The invention according to claim 26, wherein the two arms, at their pivotally supported ends, are spaced from one another such that the arms, in the insertion position in which the free ends of the arms are in their closest proximity to one another have a greater spacing from one another at their pivotally supported ends than at their free ends.

35. (Currently Amended) ~~An instrument~~ The invention according to claim 34, including a spreader element which is mounted on the arms for movement along the arms in the direction toward the free ends of the arms to move the two arms about their pivotal support away from each other.

36. (Currently Amended) ~~An instrument~~ The invention according to claim 35, wherein at least one of the two arms has a structure for receiving the spreader element, and including an elongated feed rod connected to the spreader element.

37. (Currently Amended) ~~An instrument~~ The invention according to claim 36, wherein the feed rod includes a rack which meshes with a driving gear wheel in the region of the pivotal support of the arms.

38. (Currently Amended) ~~An instrument~~ The invention according to claim 26, wherein the retention devices are pins which engage bores in the upper and lower parts, respectively.

39. (Currently Amended) ~~An instrument~~ The invention according to claim 26, wherein the retention device on at least one of the arms is rotatable about an axis that is located in the region of the free end of that arm and which extends parallel to the pivot axis at the pivotal support of that arm, and wherein the retention device, after being pivoted about this axis, can be locked in different angular positions.

40. (Currently Amended) ~~An instrument~~ The invention according to claim 39, including a fixation pin insertable into bores in that arm for locking the retention device at different angular positions.

~~41. (Currently Amended) An instrument~~ The invention according to claim 26, wherein at least one of the retention devices has a releasable locking means for releasably locking its implant part thereon.

42. (Currently Amended) ~~An instrument~~ The invention according to claim 41, wherein locking of the releasable locking means is effected by rotating a locking bar about an axis of rotation, which axis extends substantially parallel to the longitudinal axis of the arm on which the retention device is mounted.

43. (Currently Amended) ~~An instrument~~ The invention according to claim 42, wherein at least a portion of the arm carrying the retention device is rotatable about its longitudinal axis to rotate the locking bar, such that in one position the locking bar of the arm locks the connected implant part and in another angular position of the arm, releases the connected implant.

44. (Currently Amended) ~~An instrument~~ The invention according to claim 43, wherein the retention device has a pin which engages a receiving bore on the connected implant part and the locking bar protrudes laterally from this pin to engage or disengage a notch on the connected implant part to lock or release it, respectively.

45. (Currently Amended) ~~An instrument~~ The invention according to claim 26, wherein the arm having the longitudinal guide structure comprises two parallel legs which form between them a receiving chamber for receiving the pivot element and

~~wherein the other arm extends centrally between them so that its free end can dip~~
between the parallel legs.

46. (Currently Amended) ~~An instrument~~ The invention according to claim 45, including a spreader element disposed between the two arms and displaceable along them, said spreader element resting on the surface of the two legs and having a protrusion which extends down between the two legs into the receiving chamber and an indentation on its top for receiving the other arm.

47. (Canceled)

48. (Currently Amended) ~~An instrument~~ The invention according to claim 26, wherein a first of said arms comprises a pair of parallel legs and the second arm comprises a single rod located centrally between the two legs of the first arm, the two arms spaced apart at one end where they are pivotally supported, such that the other ends, which are said free ends, are movable about said pivotal support, towards and away from each other.

49. (Currently Amended) ~~An instrument~~ The invention according to claim 48, wherein said longitudinal guide structure comprises grooves on the sides of the legs of the first arm which face each other, and the pivot element has lateral edges which engage said grooves.

~~50.~~ (Currently Amended) ~~An instrument~~ The invention according to claim 49, wherein the lower part which is mounted on the free end of said first arm has grooves that are aligned with the grooves on the legs, whereby the lateral edges of the pivot element are movable along the grooves of the legs and then into the grooves of the lower part.

51. (Currently Amended) ~~An instrument~~ The invention according to claim 50, including a pusher, also mounted in the grooves of the legs, a rod connected to the pusher, the pusher being movable along the grooves to push the pivot element therealong and into the lower part.

52. (Currently Amended) ~~An instrument~~ The invention according to claim 50, including a spreader element engaging the two legs of the first arm and the single rod of the second arm and positioned and shaped such that when moved along the arms toward the free ends, it spreads the arms apart from each other.

53. (Currently Amended) ~~An instrument~~ The invention according to claim 48, wherein, in the closest proximity of the upper and lower parts to each other, when mounted on the free ends of the arms, the second arm moves between the two legs of the first arm.

54. ~~(Currently Amended) An implant insertion instrument for inserting in~~
combination with a three piece intervertebral implant into an intervertebral space,
implant, the instrument comprising:

a first arm which can engage a lower part of the implant and insert it into the intervertebral space,

a second arm operatively connected to the first arm and operable in coordination with the first arm to engage an upper part of the implant to insert it into the intervertebral space essentially concurrently with insertion of the lower part, and

guide structures operatively connected to and guided by the first and second arms for spreading apart the inserted upper and lower parts and inserting a third part between them.

55. ~~(Currently Amended) An instrument~~ The invention according to claim 54, said guide structures including a pusher for pushing the ~~pivot element~~ third part along the first arm, and a spreader for spreading the arms apart.

56. ~~(Currently Amended) An instrument~~ The invention according to claim 55, wherein the first arm comprises a pair of legs with longitudinal grooves facing each other, both the ~~pivot element~~ third part and the pusher being mounted in said grooves to move along the arms, and wherein the spreader is mounted on said arms to spread the arms apart as it moves therealong.

57. ~~(Currently Amended) An instrument~~ The invention according to claim 56, wherein the lower part includes grooves aligned with the grooves of the legs, whereby the pusher can push the ~~pivot element~~ third part along the legs of the first arm and directly into the lower part.

58. (Currently Amended) ~~An instrument~~ The invention according to claim 56, wherein the upper and lower parts nest, one within the other, in their closest proximity, and the second arm comprises a single rod located centrally between the legs of the first arm, and said single rod of the second arm moves in between the legs of the first arm to accommodate the nested position of the upper and lower parts.

59. (Currently Amended) ~~An insertion instrument for inserting in combination with a three piece intervertebral implant of the type having upper and lower parts which engage adjacent vertebrae and a third part located between the upper and lower parts,~~
the instrument having an arm structure which includes a pair of parallel legs which engage the lower part at an end thereof, opposed grooves facing each other along the parallel legs and opposed grooves facing each other on the lower part and which are aligned with the grooves in the parallel legs,

the third part having lateral edges which engage the grooves of both the parallel legs and the lower part,

the third part being movable along the grooves in the parallel legs and directly into the grooves in the lower part.

60. (Currently Amended) ~~An instrument~~ The invention according to claim 59, wherein the arm structure includes a first arm which comprises the parallel legs and a second arm which at its free end engages the upper part, the first and second arms being pivotally supported and spaced apart from each other at their ends remote from their implant engaging free ends.

61. (Currently Amended) ~~An instrument~~ The invention according to claim 60, including a spreading element movable along the first and second arms for spreading the first and second arms apart to provide a spacing between the upper and lower parts for insertion of the third part therebetween.

62. (Currently Amended) ~~An instrument~~ The invention according to claim 59, wherein the lower part has a recess formed by two side walls, an end wall and an open side opposite to the end wall, its grooves being formed in the side walls, whereby the third part enters the lower part through the open side.

63. (Currently Amended) ~~An insertion instrument for inserting in combination~~ with a three piece intervertebral implant of the type having upper and lower parts engaging adjacent vertebrae and a third part located between the upper and lower parts,

a working space defined by parallel planes which pass through opposed outer surfaces of the upper and lower parts and are parallel to the direction of movement of the instruments when inserting said parts,

upper and lower arms engaging respectively at their free ends, the upper and lower parts,

an elongated spreader element for spreading the upper and lower parts apart, while in the intervertebral space, to allow insertion of the third part,

an elongated pusher element for moving the third part along the arms and into place in the intervertebral space between the spaced apart upper and lower parts, and

both of said arms, said spreader element and said pusher element being located and operable completely within said working space.

64. (Currently Amended) ~~The invention~~ An instrument according to claim 63, said lower arm comprising a pair of parallel legs, the space between said parallel legs being less than the distance between the said parallel planes, and the upper arm comprising a single rod located centrally between the two legs of the lower arm.

65. (Currently Amended) ~~An instrument~~ The invention according to claim 64, the pusher element comprising an elongated rod located and operable between the parallel legs for pushing the third part along the parallel legs and into the lower part.

66. (Currently Amended) ~~An instrument~~ The invention according to claim 65, the spreader element being located in a plane between the parallel legs and movable along the parallel legs of the lower arm and engaged on its top by the single rod of the upper arm.

~~67. (Currently Amended) An instrument.~~ The invention according to claim 64,
the third part being a pivot element located between the parallel legs and movable along
facing grooves located in the parallel legs under the action of the pusher element.

68. (Currently Amended) An insertion instrument ~~for inserting an in~~
combination with a three piece intervertebral implant having upper and lower parts and
a third part located between the upper and lower parts, which implant is insertable into
an intervertebral space between adjacent vertebrae, the instrument comprising:

a working space defined by parallel planes which pass through opposed outer
surfaces of the implant and are parallel to the direction of insertion movement of the
implant into the intervertebral space,

an elongated structure comprising a plurality of elongated arms for holding and
inserting the implant, and

wherein said elongated structure is located and operable completely within said
working space.

69. (Currently Amended) ~~An instrument.~~ The invention according to claim 68,
wherein the implant includes a first part which engages one vertebrae of the
intervertebral space and a second part which engages the other vertebrae of the
intervertebral space, the two parts being moveable relative to each other within the
intervertebral space.

70. (Currently Amended) ~~An instrument~~ The invention according to claim 69, wherein the plurality of arms include separate arms for engaging each of the two parts, all of which arms are located and operable completely within the working space.

71. (Currently Amended) ~~An instrument~~ The invention according to claim 70, wherein the implant includes a third part located, in use, between the first and second parts.

72. (Currently Amended) ~~An instrument~~ The invention according to claim 70, including a pusher for engaging the third part, said pusher also being moveable and operable completely within said working space.

73. (Currently Amended)) ~~An instrument~~ The invention according to claim 70, wherein the separate arms for the upper and lower parts are mounted for pivotable movement relative to each other about an end remote from the ends which engage the first and second parts.

74. (Currently Amended) ~~An instrument~~ The invention according to claim 70, the implant including a third part located between the first and second parts, and wherein the pusher is moveable along at least one of said arms for engaging the third part, all arms and the pusher being located and operable completely within said working space.

75. (Currently Amended) ~~An insertion instrument for inserting in combination~~
with a three piece intervertebral implant of the type having upper and lower parts which
engage adjacent vertebrae and a third part located between the upper and lower parts,
said instrument including an upper arm for holding the upper part at its free end
and a lower arm for holding the lower part at its free end,
the upper and lower parts having complementary facing structures which allows
them to come to a nested position in which their combined height is less than the total
height of the upper and lower parts, taken separately, and
the upper arm being movable vertically in relation to the lower arm such that they
overlap, taken vertically, to allow said nesting of the upper and lower parts.

76. (Currently Amended) ~~An instrument~~ The invention according to claim 75,
the lower arm comprising a pair of parallel legs, the upper arm comprising a single rod
located and movable centrally between the legs of the lower arm, and wherein when the
upper and lower arms overlap, the upper arm is located between the legs of the lower
arm.

77. (Currently Amended) ~~An instrument~~ The invention according to claim 76,
including a spreader for spreading the upper and lower arms apart to move the upper
and lower parts from their nested position towards a spaced apart position, and
including a longitudinal guide structure for receiving a third part and moving it along the
parallel legs and into the space between the separated upper and lower parts.

~~78.~~ (Currently Amended) An instrument for inserting an intervertebral implant of the type having upper and lower parts which engage adjacent vertebrae, an upper arm for holding the upper part and a lower arm for holding the lower part, the lower arm comprising a pair of elongated legs which engage the lower part at the free end thereof, and wherein at least one of the legs is rotatable relative to the lower part about its axis to move its free end between a locked position whereat it locks the lower part thereon and an unlocked position whereat the lower part is free to be removed from said free end.

79. (Previously Presented) An instrument according to claim 78, wherein both legs have pins at the ends thereof which each engage a bore in the lower part, the pin on said at least one rotatable leg having a protrusion extending perpendicular to the pin, and wherein in one rotational position of the rotatable leg, the protrusion engages an opening in the lower part to retain the lower part thereon, and in the other rotatable position of the leg, the protrusion releases the lower part.

80. (Previously Presented) An instrument according to claim 79, wherein both of said legs of the lower arm are rotatable and have pins, each with a protrusion at its free end and a corresponding opening in the lower part, and wherein the upper arm includes pins at its free end for engaging the upper part.

81. (Currently Amended) An insertion instrument for inserting in combination with a three piece intervertebral implant of the type having upper and lower parts which engage adjacent vertebrae and a third part located between the upper and lower parts, the instrument comprising,

an upper arm for holding the upper part at its free end and a lower arm for holding the lower part at its free end,

a mounting structure for connecting the upper and lower arms together at their other ends remote from their free ends, such that the other ends are spaced apart vertically from each other and pivotally supported to allow their free ends to pivot towards and away from each other, and

a spreader element engaging and movable along the upper and lower arms in one direction to spread them apart to thereby spread apart the upper and lower parts, and in the other direction to allow the upper and lower arms to come together and thereby allow the upper and lower parts to move towards each other.

82. (Currently Amended) An instrument The invention according to claim 81, the lower arm comprising a pair of parallel legs, the upper part comprising a single rod located centrally between the legs of the lower arm, said mounting structure comprising a bottom plate to which the parallel legs are connected and an upright mounting block, and the upper arm being pivotally connected to said mounting block at a pivot axis spaced above the bottom plate.

~~83. (Currently Amended) An instrument~~ The invention according to claim 82,
said spreader element including a toothed rack, a toothed gear wheel pivotally mounted
on the mounting block and engaging the rack of the spreader element, whereby turning
of the gear wheel moves the spreader element along the arms.

84. (Currently Amended) ~~An instrument~~ The invention according to claim 82,
including a pusher mounted on the arms to move the third part along the arms for
insertion between the upper and lower parts as the spreader element spreads the arms
and hence also the upper and lower parts.

85. (Currently Amended) ~~An insertion instrument for inserting in combination~~
with a three piece intervertebral implant of the type having upper and lower parts which
engage adjacent vertebrae and a third part located between the upper and lower parts,
an upper arm having an upper part at a free end thereof,
a lower arm having a lower part at a free end thereof,
the lower arm comprising a pair of parallel legs which engage the lower part at
their free ends, and define between them a receiving chamber,
the legs on the sides facing the receiving chamber including a structure which
engages the lateral edges of a third part for movement of the third part along said legs,
a pusher element mounted on the legs for pushing the third part therealong, and
a spreader element mounted on and slidable along the upper and lower arms to
spread them apart.

86. ~~(Currently Amended) An instrument~~ The invention according to claim 85, the upper and lower arms having pins at their outer ends which engage bores in the upper and lower parts, respectively, to retain the upper and lower parts on the arms.

87. ~~(Currently Amended) An instrument~~ The invention according to claim 86, the structure which engages the lateral edges of the third part comprising grooves which extend longitudinally along said legs, and the third part is a pivot element having lateral edges which engage said grooves, and wherein the pushing element also engages the grooves and is operable to move the pivot element along the arms and into a space between spread apart upper and lower parts.

88. ~~(Currently Amended) An instrument~~ The invention according to claim 87, wherein the lower part has parallel grooves in the side walls thereof which are aligned with the grooves in the legs, whereby ~~a~~ the pivot element can move directly from the grooves in the legs into the grooves in the lower part.

89. (Previously Presented) A method for inserting a three piece intervertebral implant into an intervertebral space, comprising the steps of:

assembling upper and lower parts of the intervertebral implant together and inserting them into an intervertebral space with an inserting instrument such that the upper surface of the upper part and the lower surface of the lower part engage adjacent vertebrae,

after the upper and lower parts are located in the intervertebral space, spreading them apart, and

with the upper and lower parts spread apart, moving a longitudinal guide along the inserting instrument to move a third part into the space between the upper and lower parts.

90. (Previously Presented) A method according to claim 89, wherein the step of moving the longitudinal guide includes placing the third part into grooves in the insertion instrument, and moving a pusher along those same grooves to move the third part out of the insertion instrument and into the intervertebral space between the spread apart upper and lower parts.

91. (Previously Presented) A method according to claim 90, wherein the step of causing the insertion instrument to spread apart the upper and lower parts includes moving a spreader along the insertion instrument to spread apart the upper and lower arms of the insertion instrument, the upper arm holding the upper part and the lower arm holding the lower part.

92. (Previously Presented) A method for inserting a three piece intervertebral implant into an intervertebral space, comprising the steps of:

assembling upper and lower parts of the intervertebral implant on an inserting instrument and inserting them into an intervertebral space, wherein the lower part has a recess,

~~inserting the upper and lower parts into the intervertebral space,~~
spreading the upper and lower parts apart by a distance slightly greater than the clearance between the lowermost surface of the upper part and the recess of the lower part, and
moving the third part onto the recess of the lower part.

93. (Previously Presented) A method according to claim 92, wherein the insertion instrument has a lower arm comprising a pair of parallel legs with grooves on facing sides thereof, the lower part being held at the free ends of the parallel legs and the lower part having grooves in two parallel raised side walls adjacent an open side, which grooves are aligned with the grooves of the parallel legs, and wherein the step of moving the third part into the recess of the lower part comprises moving the third part along the grooves of the parallel legs and into the grooves of the lower part.

94. (Previously Presented) A method according to claim 93, wherein the insertion instrument also includes an upper arm which engages the upper part at a free end thereof and the step of spreading the upper and lower parts apart including moving a spreader along the insertion instrument towards the free ends thereof between the upper and lower arms to spread them apart.

95. (Previously Presented) A method according to claim 94, wherein the step of moving the upper part against the top of the third part includes moving the spreader in a direction away from the free ends.

96-118. (Canceled)

119. (Currently Amended) ~~A~~An insertion device for inserting in combination with an intervertebral implant of the type having opposed vertebrae engaging upper and lower parts and an insert therebetween, comprising:

an instrument for holding and inserting the upper and lower parts into an intervertebral space, and a spreader for separating the upper and lower parts while in the intervertebral space, and

a pusher guided by the instrument to push the insert into the space between the separated upper and lower parts.

120. (Currently Amended) ~~A device~~The invention according to claim 119, wherein one of the pusher and instrument has lateral edges and the other has grooves such that the lateral edges and the grooves cooperate for guiding the pusher along the instrument.

121. (Currently Amended) ~~A device~~The invention according to claim 120, wherein the pusher has the lateral edges which engage grooves in the instrument.

122. (Currently Amended) ~~A device~~The invention according to claim 119, wherein the instrument has upper and lower arms for engaging, respectively, the upper

~~and lower parts and including a spreader movable along the instrument to separate the~~
upper and lower arms.

123. (Currently Amended) ~~A device~~ The invention according to claim 119,
wherein the instrument has upper and lower arms which are spaced apart and
operatively pivotally engaged to each other at a location spaced from the upper and
lower part engaging ends of the instrument.

124. (Currently Amended) ~~A device~~ The invention according to claim 119,
wherein the instrument has upper and lower arms for engaging the upper and lower
parts, the lower arm having a pair of legs and wherein the pusher is mounted on the pair
of legs for movement therealong.

125. (Currently Amended) ~~A device~~ The invention according to claim 124,
including a spreader for spreading the upper and lower arms apart, and wherein the
spreader is also mounted for movement along the pair of legs.

126. (Previously Presented) A method of inserting an intervertebral implant of
the type comprising opposed vertebrae engaging upper and lower parts and an insert
therebetween, comprising the steps of:

holding the upper and lower parts with an instrument and inserting the upper and
lower parts into an intervertebral space,

spreading the upper and lower parts away from each other, and

guiding a pusher on the instrument to push an insert into the space between the upper and lower parts.

127. (Previously Presented) The method according to claim 126, wherein the step of guiding the pusher on the instrument comprises engaging the pusher and the instrument together by lateral edges and groove connections, one of said lateral edge or groove on the instrument and the other on the pusher.

128. (Previously Presented) The method according to claim 127, wherein the lateral edges are on the pusher and the grooves are in the instrument.

129. (Previously Presented) The method according to claim 126, wherein the spreading step includes moving a spreader along the instrument to separate the upper and lower arms and hence the upper and lower parts.

130. (Previously Presented) The method according to claim 129, wherein the instrument includes upper and lower arms engaging, respectively, the upper and lower parts, and the separating step includes moving a spreader along the instrument to spread the upper and lower arms and hence the upper and lower parts.

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